Abstract

The present invention provides a method of characterizing a frequency response of a transmission channel between a transceiver and a subscriber unit. The method includes once per predetermined interval of time, the transceiver transmitting a signal including multiple carriers, a plurality of the carriers including training symbols, a plurality of the carriers including information symbols. The subscriber unit generates frequency response estimates at the frequencies of the carriers including training symbols, each interval of time. The frequency response estimates are converted into a time domain response generating an impulse response once per interval of time. The impulse responses are filtered over a plurality of intervals of time. A channel profile is determined from the filtered impulse responses. The channel profile is converted to the frequency domain generating a channel interpolator. The characterized frequency response is generated from the channel interpolator and the frequency response estimates. The filtering can include averaging the impulse responses over a plurality of intervals of time, accumulating the impulse responses over a plurality of intervals of time, or weighted averaging of the impulse responses over a plurality of intervals of time. The weighted averaging can be dependent upon a phase error between the impulse responses, and/or an amplitude error between the impulse responses.